

terrestrial communication. Such as illustrated in FIG. 6, one embodiment includes a bent cross dipole antenna with four monopole antennas, the bent cross dipole antenna adapted to receive circularly polarized signals from a satellite transmitter and the monopole antenna element adapted to receive signals from terrestrial transmitters. As illustrated in FIG. 6, the bent cross dipole antenna 110 and the monopole antennas 120 are provided physical support via a printed circuit board 132. The board 132 carries signals from electrically connected devices to the antennas and provides amplification of signals received by the elements. Otherwise, the board is described as one generally well known to those skilled in the art. In another embodiment, Fuchs discloses a quadrifilar helix antenna with a four monopole terrestrial antenna, e.g. FIG. 22. Fuchs discloses only that in this second embodiment is that "the performance of the antenna system 200 is generally similar to that of the performance of the antenna system 100. Accordingly, the radiation pattern associated with the assembly 200 will be extremely similar to the radiation patterns illustrated in FIGS. 10-13." See Col. 6, lines 35-39.

In support of the present rejection, the Examiner asserts that Fuchs discloses all of the claimed limitations of claims 1 and 4-6. The Examiner must establish a prima facie finding supporting a single publication disclosing all of the claimed limitations. See MPEP § 2136. The Examiner must support the completeness of the response by providing the requisite assertions of the specific teachings by the single publication in accordance with 37 C.F.R. §1.104(b)(2).

Furthermore, the courts have consistently upheld that the single unitary reference must specifically disclose, either explicitly or inherently, all of the claimed limitations. *Rowe v. Dror*, 112 F.3d 473, 42 USPQ2d 1150 (Fed.Cir. 1197) “a prior art reference discloses, either inherently or expressly, every limitation of the claim.” *Teleflex, Inc. v. Ficosa North American Corp.*, 299 F.3d 1313, 63 USPQ2d 1374 (Fed.Cir.2002) “as we have repeatedly stated, anticipation requires that each limitation of a claim must be found in a single reference.” *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14, 57 USPQ2d 1057 (Fed.Cir.2000) “anticipation under 35 U.S.C. §102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention” citing *Electro Med. Sys. S.A. v. Cooper Life Sciences*, 34 F.3d 1048, 32 USPQ2d 1017, 1019 (Fed.Cir.1994). *Transclean Corp. v. Bridgewood Services, Inc.*, 290 F.3d 1364, 62 USPQ2d 1865 (Fed.Cir.2002) “each and limitation is found either expressly or inherently in a single prior art limitation” citing *Celeritas Techs. Ltd. V. Rockwell Int’l Corp.*, 150 F.3d 1354, 1360, 47 USPQ2d 1516, 1522 (Fed.Cir.1998).

The Examiner states that “claim 1, FIGS. 22-25 disclose a quadrifilar radiator (210), a PCB as recited (Col. 4, lines 14-19), and a monopole array (220).” Applicant submits the Examiner has not made a *prima facie* case in support of the present rejection as the Examiner has not explicitly addressed all of the claimed limitations. For example, claim 1 recites, *inter alia*, a printed circuit board (PCB) having a ground plane on an upper surface, wherein the quadrifilar radiator is centrally disposed upon the

ground plane; a plurality of lower surface micro-strip traces disposed on a lower surface of the printed circuit board;” and a monopole array “mounted on the printed circuit board and contactingly engaging the plurality of lower surface micro-strip traces.” The Examiner has not provided adequate support for the present rejection that Fuchs discloses all of the limitations of the claimed dual polarized integrated antenna of Claim 1 as the Examiner has noted where Fuchs discloses all the claimed limitations. Therefore, the present rejection Claim 1 as being anticipated by Fuchs is improper.

Based on the disclosure of Fuchs, the present rejection is improper as Fuchs fails to disclose all of the claimed limitations. Specifically, Fuchs does not disclose, among other things, the PCB having a ground plane on an upper surface and a plurality of lower surface micro-strip traces disposed on a lower surface of the printed circuit board. Fuchs merely discloses element 132 being a standard printed circuit board but does not provide any indication regarding specific elements or structures of the printed circuit board with respect to the quadrifilar radiator and monopole arrays. Therefore, the present rejection is improper as it cannot be shown specifically where Fuchs discloses a PCB having the claimed limitations of claim 1.

Regarding claims 4-6, Applicant submits these claims contain further patentable subject matter and are allowable not merely as being dependent upon an allowable based claim. Therefore, as these claims depend from claim 1 and in view of the above discussion, the present rejection is improper and should be withdrawn.

### **Rejection of Claims Under 35 U.S.C. 103(a)**

Claims 2-13, 7-11 and 12-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fuchs in view of U.S. Patent No. 6,300,917 (hereinafter referred to as "Leisten"). Applicant respectfully traverses and submits the rejection is improper as the combination of Fuchs and Leisten fail to teach or suggest all of the claimed limitations.

Regarding claims 2-3, Applicant resubmits the above position offered with regard to claim 1 and submits that these claims contain further patentable subject matter in view thereof. As such, as these claims depend upon allowable Claim 1, it is submitted that the present rejection is improper and should be withdrawn.

As understood, Leisten is directed to a dielectrically loaded antenna operating at frequencies in excess of 200 MHz. The antenna includes a pair of laterally opposed groups of helical antenna elements, where each group comprises first and second mutually adjacent elements of varying thickness providing looped conductive paths on the antenna formed by the first elements of each group and the second elements of each group resonating at differing respective resonant frequencies.

Regarding claims 7 and 16, Applicant resubmits the above-offered position regarding the Examiner-noted support for the disclosure of the claimed limitations as taught by Fuchs.

Under MPEP § 2142, the Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness, the

Examiner must first support a finding of some suggestion or motivation to combine the references, wherein the combination cannot be found within the Applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Second, there must be at least some reasonable expectation of success in combining the references, as found within the prior art references and not within the Applicants' disclosure. *Id.*

Moreover, "[a] showing of a suggestion, teaching, or motivation to combine the prior art references is an essential evidentiary component of an obvious holding." *Brown & Williams Tobacco Corp. v. Phillip Morris, Inc.*, 229 F.3d 1120, 56 USPQ2d 1456 (Fed. Cir. 2000) citing *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1342 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). The showing of a suggestion, teaching, or motivation to combine prior art references "must be clear and particular." *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). In essence, the Examiner must shown the motivation to combine the references. *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

Applicant submits that the Examiner has not provided the requisite support for the present rejection as being obvious over Fuchs in view of Leisten. As stated above with regards to claim 1, the Examiner has not indicated where Fuchs specifically discloses each of the claimed limitations, but rather merely provides a reference to further teachings of Leisten. Therefore, the Examiner's reliance on the previous paragraph 2 of the present office action for the teachings of Fuchs as applied to the limitations of claims 7 and 16 is inadequate.

Applicant also submits that the Examiner has not provided adequate support for combining the teachings of Fuchs with Leisten. The Examiner states the motivation would be to generate "an improved antenna as disclosed in Leisten." Applicant is confused as to what specifically the improved antenna would be as FIG. 24 as Fuchs illustrates the antenna 210 and does not indicate any deficiencies within the disclosed system which would so motivate one skilled in the art to combine these teachings to generate an improved antenna.

Therefore, Applicant submits the rejection is improper not only because their lacks adequate support for the teachings of Fuchs, but also there does not exist motivation to combine Fuchs with Leisten.

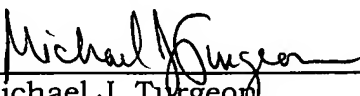
Regarding claims 8-10 14-15 and 17-19, Applicant submits these claims contain further patentable subject matter and are allowable not merely as being dependent upon an allowable based claim. Therefore, as these claims depend from claims 7 and 16 and in view of the above discussion, the present rejection is improper and should be withdrawn.

### **CONCLUSION**

Accordingly, Applicant respectfully submits that the claims are in condition for allowance and that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below-listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

Respectfully submitted,

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